

Research Curriculum Vitae

September 2007

Ignacio Martín Llorente

Departamento de Arquitectura de Computadores y Automática
Facultad de Informática, Universidad Complutense de Madrid, Spain
28040 Madrid, Spain, Phone: +34-91-3947616, Fax: +34-91-3947527
E-Mail: llornte@dacya.ucm.es, Web: asds.dacya.ucm.es/llornte

SUMMARY

Dr. Ignacio M. Llorente has a graduate degree in Physics (B.S. in Physics and M.S. in Computer Science), a Ph.D. in Physics (Program in Computer Science) and an Executive Master in Business Administration. He has about 15 years of research experience in the field of High-Performance Parallel and Distributed Computing. Currently, he is a Full Professor in Computer Architecture and Technology in the Department of Computer Architecture and System Engineering at Universidad Complutense de Madrid, where he leads the Distributed Systems Architecture Group¹. He is also a Senior Researcher at Centro de Astrobiología² (CSIC/INTA, Madrid, Spain), associated to NASA Astrobiology Institute, where he leads the Grid Technology Research Group; and an invited Professor at Universidad de Santiago de Compostela and Universidad de Extremadura. He has held several appointments as an independent expert for the European Commission (Information Society and Media Directorate - General). He is the Grid Community Liaison Coordinator for the Service Oriented Infrastructure Working Group of NESSI - European Technology Platform on Software and Services³. In the past, he has also held visiting positions at ICASE (NASA Langley Research Center, Hampton, VA) and consultancy positions with Sun Microsystems.

Major part of Dr. M. Llorente's current research concerns with research and development of Grid and virtualization technology and its deployment to build computational infrastructures. In particular, he is leading research activities related to dynamic allocation and scheduling of jobs (Globus GridWay Metascheduler⁴), use of virtualization for software configuration management and overlay of virtual machines over grid resources (GridHypervisor⁵), and federation of grid infrastructures (Grid4Utility⁶). Over the last years, he has published more than 140 scientific papers on the subjects of Grid and virtualization technology, parallel and distributed computing and scientific computing in the leading journals and proceedings books, contributed to more than 25 research and development programmes and directed 16 projects in sponsored research. He is author of 3 technical books. He belongs to the committee of different yearly-celebrated workshops on parallel/distributed processing and Grid computing. He is currently coordinating the Spanish Initiative in Grid Middleware and the Working Group on Service Oriented Infrastructures and Grids of INES⁷ - Spanish Technology Platform on Software and Services. He is a member of IEEE and OGF, participating in several Open Grid Forum working and research groups. He is also involved in the EGEE-II and BeInGrid European projects, as UCM partner responsible, and in the Globus Alliance.

CONTENTS

1.	Education	1
2.	Current Positions	1
3.	Professional Experience	1
4.	Publications	1
4.1.	Books	1
4.2.	Publications in International Scientific Journals	1
4.3.	Publications in National Scientific Journals	2
4.4.	Publications in Proceedings Volumes (International Conferences)	3
4.5.	Publications in Proceedings Volumes (National Conferences)	6
4.6.	International Technical Reports	6
4.7.	National Internal Reports	7
5.	Research Grants	7
5.1.	National Research Grants	7
5.2.	International Projects	8
6.	Other Professional Activities	8
6.1.	Reviewing Activities	8
6.2.	Committees	8
6.3.	Professional Societies	9

¹ <http://asds.dacya.ucm.es>

² <http://www.cab.inta.es>

³ <http://www.nessi-europe.com>

⁴ <http://www.GridWay.org>

⁵ <http://www.GridHypervisor.org>

⁶ <http://www.Grid4Utility.org>

⁷ <http://www.ines.org.es>

1. EDUCATION

- **Executive MBA (Master in Business Administration)**, 2003: Instituto de Empresa, Spain
- **Ph.D** in Physics (Program in **Computer Science**), 1995: Universidad Complutense de Madrid, Spain
- **Graduated** in Physics (Speciality in **Computer Science**), 1992: Universidad Complutense de Madrid, Spain

2. CURRENT POSITIONS

- **Full Professor** (Profesor Catedrático) in **Computer Architecture and Technology**, Departamento de Arquitectura de Computadores y Automática, Universidad Complutense de Madrid, Spain. Since 2006
- **Senior Researcher**, Advanced Computing Laboratory, Centro de Astrobiología (CSIC/INTA), Spain, associated to NASA Astrobiology Institute. Since 2002
- Appointments as an **Independent Expert for the European Commission** (Information Society and Media Directorate - General). Since 2005
- **Grid Community Liaison Coordinator** for the Service Oriented Infrastructures Working Group of NESSI -European Technology Platform on Software and Services, Brussels, Belgium. Since 2007

3. PROFESSIONAL EXPERIENCE

- Appointments as a **Consultant in High Performance Computing and Applied Mathematics** (1997-2002), ICASE, NASA Langley Research Center, United States
- Appointments as a **Instructor/Consultant in Performance Management, Security and Grid Computing** (1998-2003), Sun Microsystems, Spain
- **Associate Professor** (1997-2006), Departamento de Arquitectura de Computadores y Automática, Universidad Complutense de Madrid, Spain
- **Assistant Professor** (1994-1997), Departamento de Informática y Automática, Universidad Complutense de Madrid, Spain
- **Teaching Assistant** (1992-1994), Departamento de Informática y Automática, Universidad Complutense de Madrid, Spain
- **Erasmus Grant** (1993), Department of Computer Engineering, Sheffield Hallam University, United Kingdom

4. PUBLICATIONS

4.1. BOOKS

1. I. M. Llorente, *Ph.D. Thesis: Simulación de ecuaciones de onda no lineales sobre arquitecturas paralelas*, Department of Computer Science, Complutense University, September 1995
2. M. Fernández, V. Sánchez and I. M. Llorente, *Tecnología de computadores: Técnicas analógicas y digitales*, Edited by Síntesis S.A., September 1996, ISBN: 84-7738-322-7
3. I. M. Llorente and V.M. Pérez-García, *Cálculo numérico para computación en ciencia e ingeniería*, Edited by Síntesis S.A., June 1997 ISBN: 84-7738-586-6
4. L. Vázquez, F. Tirado and I. M. Llorente ed., *Supercomputation in Nonlinear and Disordered Systems: Algorithms, Applications and Architectures*, Edited by World Scientific, June 1997, ISBN: 981-02-3030-3

4.2. PUBLICATIONS IN INTERNATIONAL SCIENTIFIC JOURNALS

5. I. M. Llorente, V. M. Pérez-García, F. Tirado and L. Vázquez, Parallel Multigrid Methods in Nonlinear Optics, *SIAM News*, Vol. 29, N° 3, April, 1996, SIAM
6. O. G. Calderón, V. M. Pérez-García, I. M. Llorente and J. M. Guerra, Transverse Mode Selection in Single Longitudinal Mode Laser, *Journal: Physical Review A*, Vol. 53, N° 5, pp. 3490-3496, 1996, American Physical Society Press
7. G. Ben-Yu, I. M. Llorente, V. M. Pérez-García and L. Vázquez, Numerical Solutions of the Maxwell-Bloch Equations, *Journal of Computational Physics*, Vol. 129, pp. 181-189, 1996, Academic Press
8. I. M. Llorente, F. Tirado and L. Vázquez., Some Aspects about the Scalability of Scientific Applications on Parallel Computers, *Parallel Computing*, Vol. 22, pp. 1169-1195, 1996, Elsevier Science
9. I. M. Llorente and F. Tirado, A SIMD Computer for Multigrid Methods, *Computer Architecture News*, Vol. 25, N° 1, March, 1997, ACM
10. I. M. Llorente and F. Tirado, Relationships between Efficiency and Execution Time of Full Multigrid Methods on Parallel Computers, *IEEE Transactions on Parallel and Distributed Systems*, Vol. 8, N° 6, 1997, IEEE Press
11. I. M. Llorente, M. Prieto and F. Tirado, An Environment to Develop Parallel Code for Solving Partial Differential Equations, *Journal of Systems Architecture* 45 (1999) Vol. 45. pp 543-554, Elsevier Science
12. I. M. Llorente and N. D. Melson, Behavior of Plane Relaxation Methods as Multigrid Smoothers, *Electronic Transactions on Numerical Analysis*, Kent State University Library, Vol 10, 2000, pp. 92-114
13. M. Prieto, I. M. Llorente and F. Tirado, A Revision of Regular Domain Partitioning, *SIAM News* Vol 33 N° 1, January-February 2000, SIAM

14. I. M. Llorente, B. Diskin and N. D. Melson, Alternating Plane Smoothers for Multiblock Grids, *SIAM Journal on Scientific Computing*, Edited by SIAM, Vol. 22 N° 1 pp. 218-242, 2000
15. M. Prieto, I. M. Llorente and F. Tirado, Data Locality Exploitation in the Decomposition of Regular Domain Problems, *IEEE Transactions on Parallel and Distributed Systems*, Vol. 11, N° 11, 2000, pp. 1141-1150, Edited by IEEE Press
16. M. Prieto, R. Santiago, D. Espadas, I. M. Llorente and F. Tirado, Parallel Multigrid for Anisotropic Elliptic Equations, *Journal on Parallel and Distributed Computing*, Vol. 45, pp. 543-554, 1999, Academic Press
17. R. S. Montero, I. M. Llorente and M. D. Salas, Robust Multigrid Algorithms for the Navier-Stokes Equations, Vol. 173 pp. 412-432, 2001, *Journal of Computational Physics*, Academic Press
18. I. M. Llorente, M. Prieto-Matias and B. Diskin, An Efficient Parallel Multigrid Solver for 3-D Convection Dominated Problems, *Parallel Computing*, Vol. 27 (13) (2001) pp. 1715-1741, Elsevier Science
19. R. S. Montero, I. M. Llorente and M. Salas, A Robust Multigrid Algorithm for the Simulation of a Yawed Flat plate, Vol. 17, pp. 519-528, 2001, *Special Journal of Scientific Computing issue on the International Conference on Spectral and High Order Methods 2001*, Kluwer
20. V. M. Pérez García, S. Jiménez, I. M. Llorente and L. Vázquez, A Numerical Scheme for the Simulation of the Blow-up in the Nonlinear Schrödinger Equation, *Applied Mathematics and Computation*, Vol. 134, pp. 271-291, 2001, Elsevier Science
21. R. S. Montero, I. M. Llorente and M. Salas, Semicoarsening Smoothers for the Simulation of A Flat-plate at Yaw, Vol. 32, N° 6, pp. 873-890, 2003, *Computers and Fluids*, Elsevier Science
22. M. Prieto, R. S. Montero, I. M. Llorente and F. Tirado, A Parallel Multigrid Solver for Viscous Flows on Anisotropic Structured Grids, *Parallel Computing*, Vol. 29 (7) (2003) pp. 907-923, Elsevier Science
23. E. Huedo, R. S. Montero, and I. M. Llorente: A Framework for Adaptive Execution on Grids. *Software - Practice & Experience*, Vol. 34, No. 7, pp. 631-651, 2004, John Wiley & Sons
24. E. Huedo, U. Bastolla, R. S. Montero and I. M. Llorente: Computational Proteomics on the Grid. *New Generation Computing*, special issue on Grid Systems for Life Sciences, Vol. 22, No. 2, pp. 191-192, 2004, Ohmsha Ltd.
25. E. Huedo, U. Bastolla, R. S. Montero, and I. M. Llorente: A Framework for Protein Structure Prediction on the Grid, *New Generation Computing*, Vol. 23, No. 4, 2005, Ohmsha Ltd.
26. E. Huedo, A. Lepinette, R. S. Montero, I. M. Llorente and L. Vázquez: Development and Execution of an Impact Cratering Application on a Computational Grid, *Scientific Programming*, Vol. 12, N° 1, pp. 19-30, 2005, IOS Press
27. Ignacio M. Llorente, Rubén S. Montero, and Eduardo Huedo, A Loosely Coupled Vision for Computational Grids, *IEEE Distributed Systems*, Vol. 6, N° 5, 2005, IEEE Computer Society
28. J. Herrera, E. Huedo, R. S. Montero, and I. M. Llorente, Porting of Scientific Applications to Grid Computing on GridWay, *Scientific Programming*, Vol. 13, pp. 317-331, 2005, IOS Press
29. E. Huedo, R. S. Montero, and I. M. Llorente: The GridWay Framework for Adaptive Scheduling and Execution on Grids, *Parallel and Distributed Computing Practices*, Vol. 6, No. 3, pp. 1-8, 2005, Nova Science
30. R. S. Montero, E. Huedo and I. M. Llorente, A Benchmarking of High Throughput Computing Applications on Grids, *Parallel Computing*, Vol. 32, N. 4, pp. 267-279, 2006, Elsevier Science
31. J. L. Vázquez-Poletti, E. Huedo, R. S. Montero and I. M. Llorente, "Coordinated Harnessing of the IRISGrid and EGEE Testbeds with GridWay", *Journal of Parallel and Distributed Computing*, Vol. 66, N. 5, pp. 763-771, 2006, Elsevier Science
32. E. Huedo, R. S. Montero and I. M. Llorente, "Evaluating the Reliability of Computational Grids from the End User's Point of View", *Journal of Systems Architecture*, Vol. 52, N. 12, pp. 727-736, 2006, Elsevier Science
33. J. Herrera, E. Huedo, R. S. Montero and I. M. Llorente, "Benchmarking of a Joint IRISGrid/EGEE Testbed with a Bioinformatics Application", *Scalable Computing: Practices and Experiences*, Vol. 7, No. 2 pp. 25-32, 2006
34. E. Huedo, R. S. Montero and I. M. Llorente, "A Modular Architecture for Interfacing Pre-WS and WS Grid Resource Management", *Future Generation Computing Systems The International Journal of Grid Computing: Theory, Methods and Applications*, Vol. 23, N.2, pp. 252-261, 2006, Elsevier
35. A. Ibarra, D. Tapiador, E. Huedo, R. S. Montero, C. Gabriel, C. Arviset and I. M. Llorente, "On-the-fly XMM-Newton Data Reduction on the Grid", *Scientific Programming*, Vol. 42, N. 2, pp.141-150, 2006, IOS Press
36. R. S. Montero, E. Huedo, and I. M. Llorente, "Grid Scheduling Infrastructures based on the GridWay Meta-scheduler", *TCSC Newsletter* Volume 8, No.2, 2006, IEEE Technical Committee on Scalable Computing (TCSC)
37. J. L. Vázquez-Pletti, E. Huedo, R. S. Montero, and I. M. Llorente, "A Comparative Analysis between EGEE and GridWay and EGEE Workload Management Systems", *Multiagent and Grid Systems*, in press, IOS Press
38. J. L. Garzón, E. Huedo, R. S. Montero, I. M. Llorente and P. Chacón, "Adaptation of a Multi-Resolution Docking Bioinformatics Application to the Grid", *Journal of Software*, Vol. 2, N. 2, Academy Publisher

4.3. PUBLICATIONS IN NATIONAL SCIENTIFIC JOURNALS

39. I. M. Llorente and V. M. Pérez-García, Computación Científica en Supercomputadores, *Revista Española de Física*, Vol. 10, N° 1, pp. 62-65, 1996
40. C. García, E. Huedo, I. Martín and P. Luengo, Simulación Numérica en Ingeniería Aeroespacial, *Revista Española de Física*, Vol. 15, pp. 59-62, 2001
41. I. M. Llorente and E. Huedo, ¿Cómo Podemos Mejorar el Aprovechamiento de los Recursos de Nuestra Empresa Mediante las TI?, *ComputerWorld*, N° 918, p. 12, 2002,
42. A. Fuentes, E. Huedo, R. S. Montero and I. M. Llorente, Impacto de la Red de Interconexión en la Planificación de Trabajos en Grids, *Boletín de RedIris*, N° 68, pp. 38-44, 2004

43. I. M. Llorente, Infraestructuras Grid y su Aplicación a la Astrobiología Computacional, Revista Española de Física, Vol. 9, N. 3, pp. 12-16, 2005, *Revista Española de Física*,
44. A. Fuentes, E. Huedo, R. S. Montero and I. M. Llorente, Beneficios del uso de la tecnología grid computing en bioinformática usando la infraestructura de IRISGrid, *Boletín de RedIris*, N° 72, pp. 28-34, 2005
45. I. M. Llorente, Beneficios de la Tecnología Grid para Centros de Investigación y Empresas, *Estrategia Global*, N° 7, pp. 76-79, 2005, Ares Europa Editores S. L.
46. J. L. Vázquez, E. Huedo, R. S. Montero and I. M. Llorente, Visión Global de la Tecnología Grid, *Enlaces*, N° 2., 2004, CES Felipe II
47. J. Herrera, E. Huedo, R. S. Montero and I. M. Llorente, "Ejecución Distribuida de Bucles en Grids Computacionales", *Boletín de RedIris*, N° 80, pp. 52-56, April 2007, Centro de Comunicaciones CSIC/ RedIRIS

4.4. PUBLICATIONS IN PROCEEDINGS VOLUMES (INTERNATIONAL CONFERENCES)

48. Z. Fei, I. M. Llorente, V. M. Pérez-García, F. Tirado and L. Vázquez, Numerical Simulations and Parallel Implementation of some Nonlinear Schrödinger Systems, *NATO Workshop on Nonlinear Coherent Structure in Physics and Biology*, Bayreuth, Germany, 1993, Edited by Plenum Publishing Corporation, pp. 287-298, 1995
49. I. M. Llorente, F. Tirado, V. M. Pérez-García and L. Vázquez, Numerical Aspects and Solution of Nonlinear Schrödinger Systems on a Distributed Memory Parallel Computer, *2ND Euromicro Workshop on Parallel and Distributed Processing*, Málaga, Spain, 1994, Edited by IEEE Computer Society Press, pp. 245-252
50. I. M. Llorente, F. Tirado, L. Vázquez and J. C. Fabero, A Self-Adaptive Approach to the Parallel Numerical Simulation of the Nonlinear Schrödinger Equation Using Multigrid Techniques, *6TH Joint EPS-APS International Conference on Physics Computing*, Lugano, Switzerland, 1994, Edited by European Physical Society Press, pp. 151-154, 1994
51. I. M. Llorente, V. M. Pérez-García, F. Tirado and L. Vázquez, A Multigrid Approach to Parallel Simulation in Nonlinear Optics, *3RD Granada Seminar on Computational Physics*, Granada, Spain, 1994, Edited by Springer-Verlag, pp. 331-332, 1995
52. I. M. Llorente, F. Tirado and L. Vázquez, Parallel Numerical Solution Process of a Two-Dimensional Time Dependent Nonlinear Partial Differential Equation, *Fluctuation Phenomena: Disorder and Nonlinearity*, San Lorenzo de El Escorial, Spain, 1994, Edited by World Scientific, pp. 83-93, 1995
53. I. M. Llorente, V. M. Pérez-García, J. M. Guerra, F. Tirado and L. Vázquez, Numerical Simulations of the Maxwell-Bloch Laser Equations, *Fluctuation Phenomena: Disorder and Nonlinearity*, San Lorenzo de El Escorial, Spain, 1994, Edited by World Scientific, pp. 390-396, 1995
54. I. M. Llorente, F. Tirado, J. C. Fabero and L. Vázquez, A Self-Adaptive Approach to the Parallel Numerical Simulation of the One-Dimensional Nonlinear Schrödinger Equation, *Fluctuation Phenomena: Disorder and Nonlinearity*, San Lorenzo de El Escorial, Spain, 1994, Edited by World Scientific, pp. 95-96, 1995
55. I. M. Llorente, J. C. Fabero, F. Tirado and A. Bautista, Distributed Memory Computers versus PVM on a Workstation Cluster in the Simulation of Time Dependent Partial Differential Equation, *3RD Euromicro Workshop on Parallel and Distributed Processing*, Sanremo, Italy, 1995, Edited by IEEE Computer Society Press, pp. 20-26, 1995
56. J. C. Fabero, I. M. Llorente, S. Molina and A. Bautista, Dynamic Load Balancing in an Heterogeneous Environment under PVM, *4TH Euromicro Workshop on Parallel and Distributed Processing*, Braga, Portugal, 1996, Edited by IEEE Computer Society Press, pp. 414-419, 1996
57. S. Molina, I. M. Llorente and J. C. Fabero, Parallel Implementation of Multigrid Methods on the CRAY T3D, *Euroconference: Nonlinear Klein-Gordon and Schrödinger Systems: Theory and Applications*, San Lorenzo de El Escorial, Spain, 1995, Edited by World Scientific, pp. 350-352, 1996
58. M. Prieto, I. M. Llorente and F. Tirado, The Instruction Set Architecture of the Multigrid Machine, *Euroconference: Supercomputation in Nonlinear and Disordered Systems: Algorithms, Applications and Architectures*, San Lorenzo de El Escorial, Spain, 1996, Edited by World Scientific, 1997
59. I. M. Llorente and F. Tirado, The Multigrid Machine, *Euroconference: Supercomputation in Nonlinear and Disordered Systems: Algorithms, Applications and Architectures*, San Lorenzo de El Escorial, Spain, 1996, Edited by: World Scientific, 1997
60. I. M. Llorente and F. Tirado, Highly Parallel Computing for Solving Partial Differential Equations, *IEEE Frontier '96, Workshop on Domain Specific Systems*, Annapolis, Maryland, USA, 1996, Edited by IEEE/CESDIS, 1997
61. I. M. Llorente, M. Prieto and F. Tirado, Automatic Generation of Parallel Code for Solving Partial Differential Equations Based Problems, *Parallel and Distributed Systems Euro-PDS'96 LASTED*, Barcelona, 1997, Edited by IASTED
62. L. Piñuel, I. M. Llorente and F. Tirado, A Special Purpose Parallel Computer for Solving Partial Differential Equations, *6TH Euromicro Workshop on Parallel and Distributed Processing*, Madrid, Spain, 1998, Edited by IEEE Computer Society Press
63. M. Prieto, I. M. Llorente and F. Tirado, Partitioning Regular Domains on Modern Parallel Computers, Postconference book of the *3th International Meeting on Vector and Parallel Processing*, J.M.L.M. Palma, J. Dongarra and V. Hernández editors, Edited by Springer-Verlag in the *Lecture Notes in Computer Science (LNCS)* series, Vol. 1573, pp. 411-424
64. N. D. Melson, I. M. Llorente and J. L. Thomas, Plane Implicit Multigrid Schemes for Anisotropic Elliptic Equations, In *Proceeding of the Fifth Copper Mountain Conference on Iterative Methods*, Colorado, USA, 1998
65. O. G. Calderón, F. Encinas-Sanz, R. Gutierrez-Castrejón, I. Leyva, I. M. Llorente and J.M. Guerra, Transverse Mode Transient Temporal Evolution in a TEA CO₂ Laser, In *Proceeding of the First Euroconference in Optical Nonlinear Dynamics: Physical Problems and Applications*, Alicante, 1998, pp. 34
66. D. Espadas, M. Prieto, I. M. Llorente and F. Tirado, Parallel Resolution of Alternating-line Processes by Means of Pipelining Techniques, in *Proceedings of the 7th. Euromicro Workshop on Parallel and Distributed Processing (Euromicro PDP '99)*, Funchal (Portugal), February 1999, IEEE Computer Society, 1999. pp. 289-296

67. I. M. Llorente, B. Diskin and N. D. Melson, Smoothing Properties of Plane Smoothers for Multiblock Grids, in Proceedings of the *Ninth Copper Mountain Conference on Multigrid Methods*, Colorado, USA, April 1999, pp.22-23
68. M Prieto, D. Espadas, I. M. Llorente and F.Tirado, Message Passing Evaluation and Analysis on Cray T3E and SGI Origin 2000 Systems, In Proceedings of the *5th. Euro-Par Conference* (Euro-Par '99). Toulouse (France), August -September 1999. Published by Springer-Verlag in the *Lecture Notes in Computer Science* (LNCS) series,, pp. 173-182
69. D. Espadas, M Prieto, I. M. Llorente and F.Tirado, Solution of Alternating-line Processes on Modern Parallel Computers, In Proceedings of the *28th. International Conference ICPP '99*). Aizu-Wakamatsu (Japan), September 1999. Published by the IEEE Computer Society, pp. 208-215
70. M Prieto, R. Santiago, I. M. Llorente and F.Tirado, A Parallel Robust Multigrid algorithm based on semi-coarsening, In Proceedings of the *6th PVM / MPI European Users Meeting* (EuroPVM/MPI'99) Barcelona (Spain), September 1999. Published by Springer-Verlag in the *Lecture Notes in Computer Science* (LNCS) series., pp. 307-314,
71. R. Santiago, M Prieto, I. M. Llorente and F. Tirado, Robust multigrid algorithms for 3-D elliptic equations on structured grids, Post-conference book of the "*European Multigrid Meeting 1999*" in "*Lecture Notes in Computer Science and Engineering*" (LNCSE), pp. 193-199
72. I. M. Llorente, B. Diskin and N. D. Melson, Parallel Multigrid with Block-wise Smoothers for Multiblock Grids, in *Parallel Computational Fluid Dynamics 1999*, D. E. Keyes, A. Ecer, J. Periaux, N. Satofuka (eds.), P. Fox (asst. ed.), North Holland, 1999, pp. 100-106
73. R. Santiago, M Prieto, I. M. Llorente and F.Tirado, A Robust Multigrid Solver on Parallel Computers, In Proceedings of the *8TH Euromicro Workshop on Parallel and Distributed Processing*, Rhodos, Greece, 2000. IEEE Computer Society Press, pp. 48-50
74. E. Huedo, M. Prieto, I. M. Llorente and F. Tirado, Impact of PE mapping on Cray T3E message-passing performance. In Proceedings of the *6th. Euro-Par Conference*. Munich (Germany), August -September 2000. Published by Springer-Verlag in the *Lecture Notes in Computer Science* (LNCS) series, pp. 199-107
75. B. Diskin, I. M. Llorente and R. Santiago, An Efficient Highly Parallel Multigrid Method for the Advection Operator, *Parallel Computational Fluid Dynamics 2000*, pp. 299-306, North Holland, 2000
76. R. Santiago, I. M. Llorente and M. Salas, A Parallel Robust Multigrid Algorithm for 3-D Boundary Layer Simulations, *Parallel Computational Fluid Dynamics 2000*, North Holland, pp. 307-314, 2000
77. M. Prieto, R. Santiago, I. M. Llorente and F. Tirado , A Multigrid Solver for the Incompressible Navier-Stokes Equations on a Beowulf-class System, *30th International Conference on Parallel Processing*, Valencia, 2001, Proceedings of the 30th. International Conference on Parallel Processing (ICPP '01), pp. 550-588, 2001, IEEE Computer Society
78. R. Santiago, I. M. Llorente and M. Salas, Semicoarsening and Implicit Smoothers for the Simulation of a Flat Plate at Yaw, *International Conference on Spectral and high Order Methods*, Uppsala, Sweden, June de 2001
79. C. García, R. Santiago, M. Prieto, I. M. Llorente and F.Tirado, Beowulf Performance in CFD Multigrid Applications, Proceedings of the *10TH Euromicro Workshop on Parallel and Distributed Processing*, pp. 7-14, 2002, IEEE Computer Society
80. E. Huedo, R. S. Montero and I. M. Llorente. Experiences on Grid Resource Selection Considering Resource Proximity. *1st Across Grids Conference*, Santiago de Compostela (Spain), February 2003. Revised papers published by Springer-Verlag in the *Lecture Notes in Computer Science* (LNCS) series, Vol. 2970, pp. 1-8, 2004.
81. R. S. Montero, E. Huedo and I. M. Llorente. The GridWay Approach for Job Submission and Management on Grids. *iAstro Workshop*, Granada (Spain), February 2003.
82. R. S. Montero, E. Huedo and I. M. Llorente: Grid Resource Selection for Opportunistic Job Migration. *9th Euro-Par Conference*, Klagenfurt (Austria), August 2003. Proceedings published by Springer-Verlag in the *Lecture Notes in Computer Science* (LNCS) series, Vol. 2790, pp. 366-373, 2003.
83. R. S. Montero, E. Huedo and I. M. Llorente: Experiences about Job Migration on a Dynamic Grid Environment. *5th ParCo Conference*, Dresden (Germany), September 2003. Proceedings published by Elsevier Science in the *Advances in Parallel Computing* series, Vol. 13, pp. 579-586, 2004.
84. E. Huedo, R. S. Montero and I. M. Llorente: Adaptive Grid Scheduling of a High-Throughput Bioinformatics Application. *12th PPAM Conference*, Czestochowa (Poland), September 2003. Revised papers published by Springer-Verlag in the *Lecture Notes in Computer Science* (LNCS) series, Vol. 3019, pp. 840-847, 2004.
85. E. Huedo, R. S. Montero and I. M. Llorente: The GridWay Framework for Adaptive Scheduling and Execution in Grids. *1st AGridM Workshop*, in conjunction with the 12th PACT Conference, New Orleans (USA), October 2003
86. Fuentes, E. Huedo, R. S. Montero and I. M. Llorente: A Grid Scheduling Algorithm Considering Dynamic Interconnection Network Quality. *3rd Cracow Grid Workshop*, Cracow (Poland), October 2003. Proceedings published by Cyfronet AGH, pp. 151-158, 2004.
87. O. San José, L. M. Suárez, E. Huedo, R. S. Montero and I. M. Llorente: Resource Performance Management on Computational Grids. *2nd ISPDC Symposium*, in conjunction with the 6th IS Multi-Conference, Ljubljana (Slovenia), October 2003. Proceedings published by IEEE Computer Society Press, pp. 215-221, 2004.
88. E. Huedo, R. S. Montero and I. M. Llorente: Experiences on Adaptive Grid Scheduling of Parameter Sweep Applications. *12th Euromicro PDP Conference*, La Coruña (Spain), February 2004. Proceedings published by IEEE Computer Society Press, pp. 28-33, 2004.
89. E. Huedo, A. Lepinette, R. S. Montero, I. M. Llorente and L. Vázquez: Simulation of Mars Impact Cratering on a Grid Environment. *1st GADA Workshop*, Agia Napa (Cyprus), October 2004. Proceedings published by Springer-Verlag in the *Lecture Notes in Computer Science* (LNCS) series, Vol. 3292, pp. 50-58, 2004.

90. J. Herrera, E. Huedo, R. S. Montero and I. M. Llorente: Execution of Typical Scientific Applications on Globus-based Grids. *3rd ISPDC Symposium*, Cork (Ireland), July 2004. Proceedings published by IEEE Computer Society Press, pp. 177-183, 2004.
91. J. Herrera, R. S. Montero, E. Huedo and I. M. Llorente: DRMAA Implementation within the GridWay Framework, *Workshop on Grid Application Programming Interfaces*, 12th Global Grid Forum, Brussels (Belgium), September 2004.
92. J. Herrera, R. S. Montero, E. Huedo and I. M. Llorente, Embarrassingly Distributed and Master-Worker Paradigms on the Grid, Proceedings of the *1st Workshop on Scientific Applications on Grid Computing* on the 2004 IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology, Proceedings published by Springer-Verlag in the Lecture Notes in Computer Science (LNCS) series, Vol. 3458, 8 pages, 2005
93. J. Herrera, E. Huedo, R. S. Montero and I. M. Llorente: Developing Grid-Aware Applications with DRMAA on Globus-based Grids. *10th Euro-Par Conference*, Pisa (Italy), August 2004. Proceedings published by Springer-Verlag in the Lecture Notes in Computer Science (LNCS) series, Vol. 3149, pp. 429-435, 2004.
94. Murtagh, F.; Egret, D.; Longo, G.; di Gesu, V.; Allen, G.; Nunez, J.; Molina, R.; Llorente, I.; Shearer, A.; Golden, A.; Butler, R.; Holl, A.; Tsvetkov, M.; Boyd, D.; Sastry, L.; Golev, V.; Jetzer, P.; Csillaghy, A., "iAstro: Computational and Information Infrastructure in the Astronomical DataGrid", *Toward an International Virtual Observatory: Proceedings of the ESO/ESA/NASA/NSF Conference*, 2002, pp. 296, 2004
95. J. Herrera, E. Huedo, R. S. Montero and I. M. Llorente, A Grid-Oriented Genetic Algorithm, *Advances in Grid Computing – EGC 2005*, Springer-Verlag in the Lecture Notes in Computer Science (LNCS) series, Vol. 3470, pp.315-322, 2005
96. J. L. Vázquez-Poletti, E. Huedo, R. S. Montero and I. M. Llorente, Execution of a Bioinformatics Application in a Joint IRISGrid/EGEE Testbed, Proceedings of the *Workshop on Large Scale Computations on Grids* 2005, Proceedings published by Springer-Verlag in the Lecture Notes in Computer Science (LNCS) series, Vol. 3911, pp. 831-838, 2006
97. E. Huedo, R. S. Montero e I. M. Llorente, Coordinated Use of Globus Pre-WS and WS Resource Management Services with GridWay, Proceedings of the *2º Workshop on Grid Computing and its Application to Data Analysis* on the Move Federated Conferences 2005, Proceedings published by Springer-Verlag in the Lecture Notes in Computer Science (LNCS) series Vol. 3762, pp. 234–243, 2005
98. E. Huedo, R. S. Montero, and I. M. Llorente, An Evaluation Methodology for Computational Grids, Proceedings of the *2005 International Conference on High Performance Computing and Communications*, Proceedings published by Springer-Verlag in the Lecture Notes in Computer Science (LNCS) series, Vol. 3726, pp. 409-504, 2005
99. J. Herrera, E. Huedo, R. S. Montero and I. M. Llorente, Loosely Coupled Loop Scheduling in Computational Grids, Proceedings of the Third High-Performance Grid Computing Workshop in conjunction with the *International Parallel and Distributed Processing Symposium* (IPDPS), pp.395-400, 2006, IEEE Computer Society Press
100. J.L. Vázquez-Poletti, E. Huedo, Rubén S. Montero and I. M. Llorente, "Massive Ray Tracing in Fusion Plasmas on EGEE", *EGEE (Enabling Grids for E-sciencE) User Forum 2006*, Geneva, Switzerland, March 2006
101. Ignacio M. Llorente, Rubén S. Montero, Eduardo Huedo and Katia Leal, "A Grid Infrastructure for Utility Computing", Proceedings of the *Third International Workshop on Emerging Technologies for Next-generation GRID* (ETNGRID 2006), pp. 163-168, IEEE Computer Society Press
102. J. L. Vázquez-Poletti, E. Huedo, R. S. Montero and I. M. Llorente, "A Comparative Analysis between EGEE and GridWay Workload Management Systems", *Workshop on Grid Computing High Performance and Distributed Applications on the Move Federated Conferences 2006*, Proceedings published by Springer-Verlag in the Lecture Notes in Computer Science (LNCS) series, Vol. 4276, pp. 1143-1151, 2006
103. J. I. Garzón, E. Huedo, R. S. Montero, I. M. Llorente and P. Chacón, "Grid Multi-Resolution Docking", *15th Euromicro Conference on Parallel, Distributed and Network-based Processing*, pp. 3-10, 2006, Conference Proceedings, IEEE Computer Society Press
104. J.L. Vázquez-Poletti, R. Gil, E. Huedo, Rubén S. Montero and I. M. Llorente, "Demonstration of Application Migration to EGEE using GridWay ", *EGEE (Enabling Grids for E-sciencE) 2006*, Geneva, Switzerland, september 2006, Book of Abstracts
105. A. J. Rubio, R. S. Montero, E. Huedo and I. M. Llorente, "Straightforward Deployment of XMM-Newton Scientific Analysis Software on Grids with GridWay", *ESA Grid Workshop 2006*, October, 2006, Madrid, Book of Abstracts
106. A. J. Rubio, R. S. Montero, E. Huedo e I. M. Llorente, "Management of Virtual Machines on Globus Grids Using GridWay", *Fourth High-Performance Grid Computing Workshop, 21st IEEE International Parallel & Distributed Processing Symposium*, pp. 1-7, 2007,, Conference Proceedings, IEEE Computer Society Press
107. J.L. Vázquez-Poletti, E. Huedo, R.S. Montero e I.M. Llorente, "Workflow Management in a Protein Clustering Application", *Seventh IEEE International Symposium on Cluster Computing and the Grid - CCGrid 2007*, pp. 679-684, 2007, Conference Proceedings, IEEE Computer Society Press
108. D. Tapiador, A. J. Rubio-Montero, E. Huedo, R. S. Montero and I. M. Llorente, "Two Approaches for the Management of Virtual Machines on Grid Infrastructures", Spanish Conference on e-Science Grid Computing, march 2007, Madrid, Proceedings of the Spanish Conference on e-Science Grid Computing, pp. 72-82
109. F. Castejón, I. Campos, A. Cappa, L. A. Fernández, E. Huedo and I. M. Llorente, "Fusion in the Grid", Spanish Conference on e-Science Grid Computing, march 2007, Madrid, Proceedings of the Spanish Conference on e-Science Grid Computing, pp. 141-146
110. F. Castejón, I. Campos, M. Tereshchenko, J. L. Vázquez-Poletti, J. L. Velasco, V. Voznesensky, A. Cappa, L. A. Fernández, E. Huedo, I. M. Llorente, V. Martín, R. S. Montero, M. Mikhailov and A. Tarancón, "Status of Fusion Activities in the Grid", *2nd EGEE User Forum*, may 2007, Manchester, UK, Book of Abstracts

111. I. M. Llorente, R. S. Montero, E. Huedo, C. Vázquez, J. L. Vázquez-Poletti, J. Herrera and K. Leal, "GridWay as a Tool for Porting Applications to the EGEE Infrastructure", *2nd EGEE User Forum*, may 2007, Manchester, UK, Book of Abstracts
112. J. L. Vázquez-Poletti, E. Huedo, R. S. Montero, I. M. Llorente, J. M. Fernández and A. Valencia, "Protein Clustering on the EGEE", *2nd EGEE User Forum*, may 2007, Manchester, UK, Book of Abstracts
113. J. L. Vázquez-Poletti, E. Huedo, R. S. Montero, I. M. Llorente, A. Cappa, M. Tereshchenko and F. Castejón, "MARATRA: A Production Fusion Physics System", *2nd EGEE User Forum*, may 2007, Manchester, UK, Book of Abstracts
114. I. M. Llorente, E. Huedo, R. S. Montero, A. J. Rubio and D. Tapiador, "Using GridWay for the Management of Virtual Machines in the EGEE Infrastructure", *2nd EGEE User Forum*, may 2007, Manchester, UK, Book of Abstracts
115. J. L. Vázquez-Poletti, E. Huedo, Rubén S. Montero and I. M. Llorente, "Advanced Strategies for Efficient Workflow Management in a Protein Clustering Application with GridWay", *1st Iberian Grid Infrastructure Conference*, Santiago de Compostela, España, may 2007, Conference Proceedings, pp. 191-207, CESGA
116. I. M. Llorente, R. S. Montero, E. Huedo, T. Vaquez and J. L. Vázquez-Poletti, "GridWay: A metascheduler for Globus-based Grids", *2nd Annual TeraGrid Conf. (TeraGrid 2007)*, Madison, WI (Estados Unidos), June 2007, Book of Abstracts
117. Tino Vazquez, Eduardo Huedo, Ruben S. Montero, and Ignacio M. Llorente, "Evaluation of A Utility Computing Model based on the Federation of Grid Infrastructures", *EuroPar 2007*, Rennes, Francia, 2007, Workshop Proceedings, Lecture Notes in Computer Science (LNCS), Vol. 4641, pp. 372-381, Springer Verlag
118. Vazquez, Javier Fontan, Eduardo Huedo, Ruben S. Montero, and Ignacio M. Llorente, "Transparent Access to Grid-Based Compute Utilities", *PPAM 2007*, Gdansk, Polonia, Workshop Proceedings, Lecture Notes in Computer Science (LNCS), in press, Springer Verlag
119. J. L. Vázquez-Poletti, E. Huedo, R. S. Montero e I. M. Llorente, "Replication Heuristics for Efficient Workflow Execution on Grids", Grid computing, high-performance and Distributed Applications, *GADA 2007*, Vilamoura, Portugal, Workshop Proceedings, Lecture Notes in Computer Science, in press
120. I. M. Llorente, R. S. Montero, E. Huedo, T. Vaquez, J. Fontán, H. Herrera and J. L. Vázquez-Poletti, "GridWay Interfaces for On-demand Access to EGEE", *EGEE Conference 2007*, october 2007, Budapest, Hungary

4.5. PUBLICATIONS IN PROCEEDINGS VOLUMES (NATIONAL CONFERENCES)

121. I. M. Llorente and F. Tirado, Simulation of some Nonlinear Schrödinger Systems on a Distributed Memory Parallel Computer, *IV Jornadas sobre Paralelismo*, Santander, 1993, Actas de las jornadas, 1993
122. I. M. Llorente, J. C. Fabero, F. Tirado and A. Bautista, Distributed Memory Computers versus PVM on a Workstation Cluster in the Simulation of Time Dependent Partial Differential Equations, *V Jornadas sobre Paralelismo*, Granada, 1994, Actas de las jornadas, pp. 1-12, 1994
123. J. C. Fabero, I. M. Llorente, S. Molina, A. Bautista and F. Tirado, Reequilibrado dinámico de carga para PVM en red de estaciones, *VI Jornadas sobre Paralelismo*, Barcelona, 1995, Actas de las jornadas, pp. 143-151, 1995
124. F. Tirado, I. M. Llorente, A. Bautista, J. C. Fabero, S. Molina, M. Prieto and V. Sánchez, Entorno de simulación numérica paralela, *VII Jornadas sobre Paralelismo*, Santiago de Compostela, 1996, Actas de las jornadas, pp. 495-509, 1996
125. M. Prieto, D. Espadas, I. M. Llorente and F. Tirado, Explotación de la localidad en la descomposición de dominios regulares, *IX Jornadas sobre Paralelismo*, San Sebastián, 1998, Actas de las jornadas
126. I. M. Llorente, Tendencias de Computación en Red y Tecnologías Grid, *No Lineal 2002*, Cuenca, 2002, Actas de las jornadas
127. R. Santiago and I. M. Llorente, Algoritmos Multimalla Paralelos y Robustos para la Resolución de las Ecuaciones de Navier-Stokes, *No Lineal 2002*, Cuenca, 2002, Actas de las jornadas
128. E. Huedo, R. S. Montero and I. M. Llorente, Adaptive Scheduling of a Bioinformatics Application on the Grid, *XIV Jornadas de Paralelismo*, Leganés, 2003, Actas de las jornadas
129. O. San José, L. M. Suárez, E. Huedo, R. S. Montero and I. M. Llorente, Preserving Resource Performance on Computational Grids, *XIV Jornadas de Paralelismo*, Leganés, 2003, Actas de las jornadas
130. J. L. Vázquez-Poletti, E. Huedo, R. S. Montero and I. M. Llorente, Evaluación del Uso Coordinado de Infraestructuras Grid, *XVI Jornadas de Paralelismo*, Granada, 2005, Actas de las jornadas
131. Katia Leal, Eduardo Huedo, Rubén S. Montero and Ignacio M. Llorente, "Una infraestructura Grid para soluciones de tipo Utility Computing", *XVII Jornadas de Paralelismo*, Albacete, 2006
132. A. J. Rubio, E. Huedo, R. S. Montero and I. M. Llorente, "Planificación de Entornos de Trabajo Virtuales sobre Infraestructuras Grid", *XVII Jornadas de Paralelismo*, Albacete, 2006
133. J. L. Vázquez-Poletti, E. Huedo, R. S. Montero e I. M. Llorente, "Two Different Meta-Scheduling Strategies for the Grid", *XVII Jornadas de Paralelismo*, Albacete, 2006
134. E. Huedo, R. S. Montero and I. M. Llorente, "Infraestructuras grid para utility computing", Computación Grid: del Middleware, Universidad de Castilla – La Mancha

4.6. INTERNATIONAL TECHNICAL REPORTS

135. I. M. Llorente and N. D. Melson, *Robust Multigrid Smoothers for Three Dimensional Elliptic Equations with Strong Anisotropies*, NASA ICASE Technical Report 98- 37
136. I. M. Llorente, B. Diskin and N. D. Melson, *Plane-Smoother for Multi-Block Grids: Computational Aspects*, NASA ICASE Technical Report 99-17
137. Ruben S. Montero and Ignacio M. Llorente, *Robust Multigrid Algorithms for the Incompressible Navier-Stokes Equations*, NASA ICASE Report No. 2000-27

138. I. M. Llorente, M. Prieto-Matias and B. Diskin, *An Efficient Parallel Multigrid Solver for 3-D Convection Dominated Problems*, NASA ICASE Technical Report 2000-29
139. R. S. Montero, I. M. Llorente and M. D. Salas, *Semicoarsening and Implicit Smoothers for the Simulation of a Flat Plate at Yaw*, NASA ICASE Technical Report 2001-13
140. M. Prieto, R. S. Montero and I. M. Llorente, *Parallel Multigrid Solver for Fluids*, NASA ICASE Technical Report 2001-34
141. S. Jiménez, I. M. Llorente, A. M. Mancho, V. M. Pérez-García and L. Vázquez, *A Numerical Scheme for the Simulation of Blow-up in the Nonlinear Schrödinger Equation*, Centro de Ciencias Matemáticas, Universidade da Madeira, CCM. 45/01
142. R. S. Montero, E. Huedo and I. M. Llorente, *An Experimental Framework for Executing Applications in Dynamic Grid Environments*, NASA ICASE Technical Report 2002-43
143. R. Yahyapour, P. Wieder, A. Pugliese, D. Talia, J. Hahm, and I. M. Llorente, *Grid Scheduling Use Cases*, Global Grid Forum, GWD-I, Informational, Grid Scheduling Architecture Research Group (GSA-RG), 2005
144. J. Herrera, R. S. Montero, E. Huedo and I. M. Llorente, *GridWay DRMAA 1.0 Implementation - Experience Report*, Open Grid Forum, Open Document GFD.104, May 2007
145. R. Badía et al, *Use-Cases and Requirements for Grid Checkpoint and Recovery*, Open Grid Forum, Open Document GFD.92, Mayo 2007

4.7. NATIONAL INTERNAL REPORTS

146. H. Mecha, J. A. López, R. Moreno, I. M. Llorente and R. Hermida, *Entorno de simulación para ferrocarril metropolitano. Guía de referencia técnica*, Internal Report 16-95, Dept. Informática y Automática, Universidad Complutense
147. H. Mecha, J. A. López, R. Moreno, I. M. Llorente and R. Hermida, *Entorno de simulación para ferrocarril metropolitano. Manual del usuario*, Internal Report 17-95, Dept. Informática y Automática, Universidad Complutense
148. I. M. Llorente and F. Tirado, *A Special Purpose Parallel Computer for Solving Partial Differential Equations (Extended Version)*, Internal Report 25-96, Dept. Informática y Automática, Universidad Complutense
149. I. M. Llorente and F. Tirado, *Análisis de algoritmos y arquitecturas paralelas por el método del espacio de fases*, Internal Report 28-96, Dept. Informática y Automática, Universidad Complutense
150. I. M. Llorente and F. Tirado, *Some Aspects about the Scalability of Scientific Applications on Parallel Architectures*, Internal Report 29-96, Dept. Informática y Automática, Universidad Complutense

5. RESEARCH GRANTS

5.1. NATIONAL RESEARCH GRANTS

- Síntesis de Alto Nivel de Arquitecturas Digitales, *CICYT, TIC 89/104*; Role: Researcher, 1990-1993
- FIDIAS II: Un entorno integrado para la síntesis de alto nivel. *CICYT, TIC 92/0088*, Role: Researcher, 1993-1995
- Paralelización de Esquemas Numéricos, *CAM 93/264*, Role: Researcher, 1993-1994
- Generador Automático de Código de Control en Tiempo Real e Integración Multisensorial: Aplicación a Procesos Mecánicos y Químicos, *CICYT, TAP 94-0832-C02-01*, Role: Researcher, 1994-1997
- Entorno de Síntesis para Circuitos de Comunicaciones a Partir de Descripciones VHDL, *CICYT, TIC 94-0725-C03-02*, Role: Researcher, 1994-1997
- Servidor de Cálculo Multiprocesador, *CICYT, TIC IN96/0150*, Role: Researcher, 1996-1997
- Servidor de Cálculo, *CAM, 687/1996*, Role: Researcher, 1997-1998
- Entorno de Simulación Numérica Paralela, *CICYT, TIC 96/1071*, Role: Work Package Manager, 1996-1999
- Computación Paralela sobre Plataformas de Bajo Coste, *CICYT, TIC 99/0474*, Role: Work Package Manager, 1999-2002
- Tecnología Grid Aplicada a Astrobiología Computacional, *INTA*, Role: Principal Investigator, 2003-2005
- Computación en Grid: Explotación de Recursos Computacionales en Internet, *MCyT, TIC2002-00334*, Role: Principal Investigator, 2002-2003
- Sistemas Modelados Mediante Ecuaciones en Derivadas Parciales: Teoría, Simulación y Aplicaciones, *MCyT, BFM2001-4809-E*, Role: Work Package Manager, 2002-2003
- Preparación de Proyectos Grid en el Marco de las Iniciativas de e-Ciencia en Europa, *MCyT, TIC2002-11109-E* Role: Work Package Manager, 2003-2004
- Un Entorno para la Ejecución Auto-Adaptativa de Aplicaciones en Grids Computacionales y de Datos, *MCyT, TIC2003-101321*, Role: Principal Investigator, 2003-2006
- Red Temática para la Coordinación de Actividades Middleware en Grids, *MCyT, TIC 2002-12422-E*, Role: Principal Investigator, 2004-2006
- Evolución de las Aplicaciones Bioinformáticas sobre Servicios de Red y Computación Distribuida Grid, *CAM S-0505/TIC/000101* Role: Partner Principal Investigator, 2006-2009
- Una Arquitectura para la Coexistencia de Diferentes Infraestructuras Grid en Internet, *BSCH/UCM PR27/05-14035-BSCH*, Role: Principal Investigator, 2006-2007
- Red Temática para la Coordinación de Actividades Middleware en Grids II, *TIN2005-25849-E*, Role: Principal Investigator, 2006-2007
- Una Infraestructura Grid para Utility Computing, *TIN2006-02806*, Role: Principal Investigator, 2006-2009

5.2. INTERNATIONAL PROJECTS

- Behavioral Methodologies for Digital System Design, European Union, HCM, CHRX-CT94-0459, Role: Researcher, 1994-1997
- Robust and Scalable Solvers in Fluid Dynamics for Multi-block Grids on Massive Parallel Computers, Fulbright Commission, 99003, Role: Work Package Manager, 1999-2001
- Parallel Multigrid Methods, Supported by the National Aeronautics and Space Administration under NASA contract No. NAS1-97046, Role: Work Package Manager, 1998-2001
- Adaptive Execution on Grid Environments, Supported by the National Aeronautics and Space Administration under NASA contract No. NAS1-97046, Role: Work Package Manager, 2001-2002
- iAstro: Computational and Information Infrastructure in the Astronomical Data Grid, European Union, Action Cost 283, Role: Researcher, 2001-2005
- EGEE: Enabling Grids for E-Science, European Union, IST-2003-508833, Role: Partner Responsible, 2004-2006
- EGEE-II: Enabling Grids for E-Science, European Union, IST-2005-031688, Role: Partner Responsible, 2006-2008
- BeInGrid: Business Experiments in Grid, European Union, IST-2005-034702, Role: Partner Responsible, 2006-2008

6. OTHER PROFESSIONAL ACTIVITIES**6.1. REVIEWING ACTIVITIES**

- Reviewer of articles for the “4TH Euromicro Workshop on Parallel and Distributed Processing”, Braga (January, 1996)
- Reviewer of articles for the *Revista Española de Física* (Spanish Journal of Physics)
- Reviewer of articles for the “Parallel and Distributed Systems Euro-PDS’96 LASTED”, Barcelona (June, 1997)
- Reviewer of articles for the “6TH Euromicro Workshop on Parallel and Distributed Processing”, Madrid, Spain (January, 1998)
- Reviewer of articles for the “3TH International Meeting on Vector and Parallel Processing”, Porto, Portugal (July, 1998)
- Reviewer of articles for the “7TH Euromicro Workshop on Parallel and Distributed Processing”, Madeira, Portugal (January, 1999)
- Reviewer of articles for the “8TH Euromicro Workshop on Parallel and Distributed Processing”, Rhodos, Greece (January, 2000)
- Reviewer of articles for the “9TH Euromicro Workshop on Parallel and Distributed Processing”, Mantova, Italy, (January, 2001)
- Reviewer of articles for the “First International Workshop on Scientific Applications on Grid Computing”(SAG’04), The 2004 IEEE/WIC/ACM International Joint Conference on Web Intelligence (WI 2004) Beijing, China (July, 2004)
- Reviewer of articles for the “5th IEEE/ACM International Workshop on Grid Computing”, Pittsburgh, United States (November, 2004)
- Reviewer of articles for the “The 2nd International Workshop on Grid Computing and Peer-to-Peer Systems”, The 2005 International Conference On Computational Science And Its Applications (ICCSA 2005), Singapore, (May, 2005)
- Reviewer of articles for the “Grid Computing and its Application to Data Analysis” (GADA’05), OnTheMove Federated Conferences (OTM’05), Napa, Cyprus (November, 2005)
- Reviewer of articles for the “Workshop on Grid Applications: from Early Adopters to Mainstream Users, Global Grid Forum 14” (GGF14), Chicago, United States (June, 2005)
- Reviewer of articles for the “First International Workshop On Knowledge And Data Mining Grid” (KDMG’05), 3RD Atlantic Web Intelligence Conference 2005 (AWIC’05), Lodz, Polonia (June, 2005)
- Reviewer of articles for the “Grid Computing and its Application to Data Analysis” (GADA’06), OnTheMove Federated Conferences (OTM’06), Montpellier, France (November, 2006)
- Reviewer of articles for the “Grid computing, high-performance and Distributed Applications” (GADA’07), OnTheMove Federated Conferences (OTM’07), Montpellier, France (November, 2007)
- Reviewer of articles for the “Seventh IEEE International Symposium on Cluster Computing and the Grid — CCGrid 2007”, Rio de Janeiro, Brazil (May 2007)
- Reviewer of articles for *IEEE Transactions on Parallel and Distributed Systems*, IEEE Computer Society (since 2001)
- Reviewer of articles for *Computing and Informatics*, Slovak Academic Press (since 2005)
- Reviewer of articles for the *Journal on Parallel and Distributed Computing*, Elsevier (since 2005)
- Reviewer of articles for the *Future Generation Computer Systems The International Journal Of Grid Computing: Theory, Methods And Applications*, Elsevier (since 2006)
- Project evaluator for the *Ministerio de Educación y Ciencia* of Spain (since september 2002)
- Project evaluator for the *Dirección General de Investigación* of Community of Madrid (since september 2002)
- Project reviewer for the *European Commission - DG Information Society and Media* (since november 2005)
- Project reviewer for the *Ministerio de Educación, Ciencia y Tecnología* of Argentina (since june 2007)

6.2. COMMITTEES

- Scientific and Organizing Committee in the *Euroconferencia CT94-0234a: Nonlinear Klein-Gordon and Schrödinger Systems: Theory and Applications*, September 1995, San Lorenzo de El Escorial, Madrid, Spain
- Scientific and Organizing Committee in the *Euroconferencia CT94-0234b: Supercomputation in Nonlinear and Disordered Systems: Algorithms, applications and Architectures*, September 1996, San Lorenzo de El Escorial, Madrid, Spain

- Organizing and Program Committee in the *6TH Euromicro Workshop on Parallel and Distributed Processing*, January 1998, Madrid, Spain
- Program Committee in the *7TH Euromicro Workshop on Parallel and Distributed Processing*, January 1999, Madeira, Portugal
- Program Committee in the *8TH Euromicro Workshop on Parallel and Distributed Processing*, January 2000, Rhodos, Grecia
- Program Committee in the *9TH Euromicro Workshop on Parallel and Distributed Processing*, January 2001, Mantova, Italia
- Program Committee in the “*First International Workshop on Scientific Applications on Grid Computing*”(SAG'04), The 2004 IEEE/WIC/ACM International Joint Conference on Web Intelligence (WI 2004) Beijing, China (july, 2004)
- Program Committee in the “*The 2nd International Workshop on Grid Computing and Peer-to-Peer Systems*”, The 2005 International Conference On Computational Science And Its Applications (ICCSA 2005), Singapore , (May, 2005)
- Program Committee in the “*First International Workshop On Knowledge And Data Mining Grid*” (KDMG'05), 3RD Atlantic Web Intelligence Conference 2005 (AWIC'05), Lodz, Polonia (June, 2005)
- Program Committee in the “*Workshop on Grid Applications: from Early Adopters to Mainstream Users, Global Grid Forum 14*” (GGF14), Chicago, United States (June, 2005)
- Program Committee in the “*Grid Computing and its Application to Data Analysis*” (GADA'05), OnTheMove Federated Conferences (OTM'05), Napa, Cyprus (November, 2005)
- Program Committee in the “*Grid Computing and its Application to Data Analysis*” (GADA'06), OnTheMove Federated Conferences (OTM'06), Montpellier, France (November, 2006)
- Program Committee in the “*Grid Computing and its Application to Data Analysis*” (GADA'07), OnTheMove Federated Conferences (OTM'07), Portugal (November, 2007)
- Scientific Committee in the “*First Iberian Grid Infrastructure Conference*”, Spain (May, 2007)
- Technical Committee of *Centro de Magnetoencefalografía* (Universidad Complutense de Madrid) since June 2004

6.3. PROFESSIONAL SOCIETIES

- OGF (Open Grid Forum), member since 2006
- IEEE (The Institute of Electrical and Electronical Engineers), member since 1993. Counsellor of the UCM Student Branch
- SIAM (Society for Industrial and Applied Mathematics), 1997-2002
- Real Sociedad Española de Física, (1995-2006)